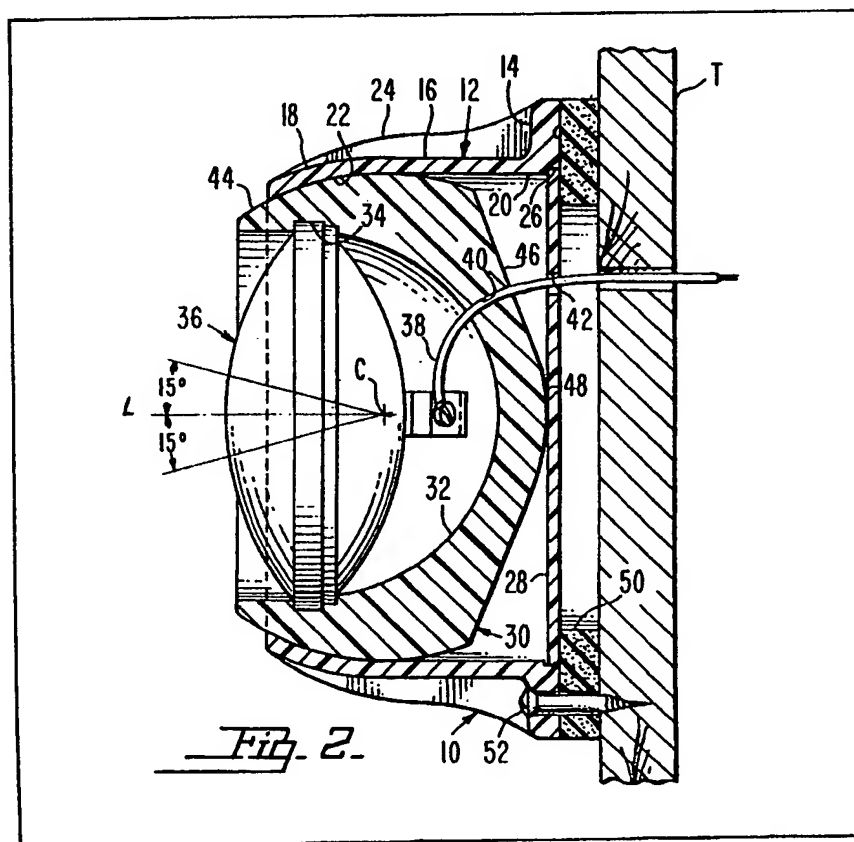


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(54) Boat lights

(57) A boat light 10 especially adapted to be mounted upon a transom T or stern of a cabin cruiser, speedboat, small yacht or other small vessel, comprises a holder (30) for a lamp unit 36 having a spherically curved outer surface 44 engaging a complementary inner surface 22 of a housing 16 attachable to the hull of the boat. The holder 30 is universally adjustable to selected angular positions of adjustment relative to the housing 16.



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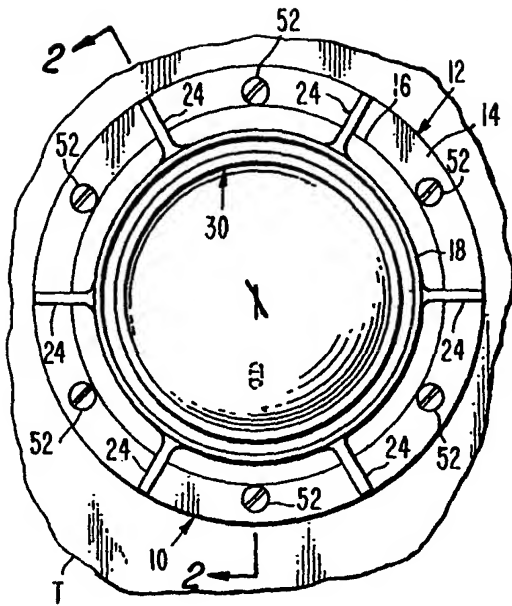


Fig. 1.

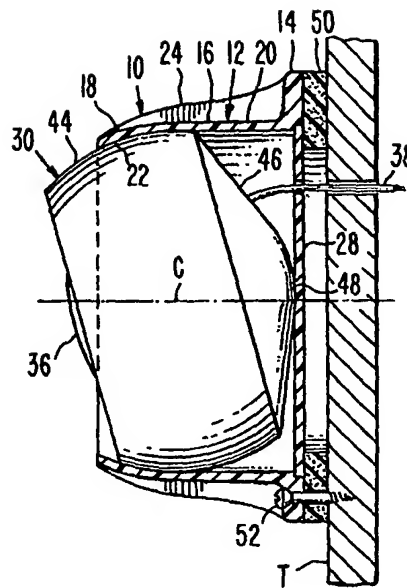


Fig. 3.

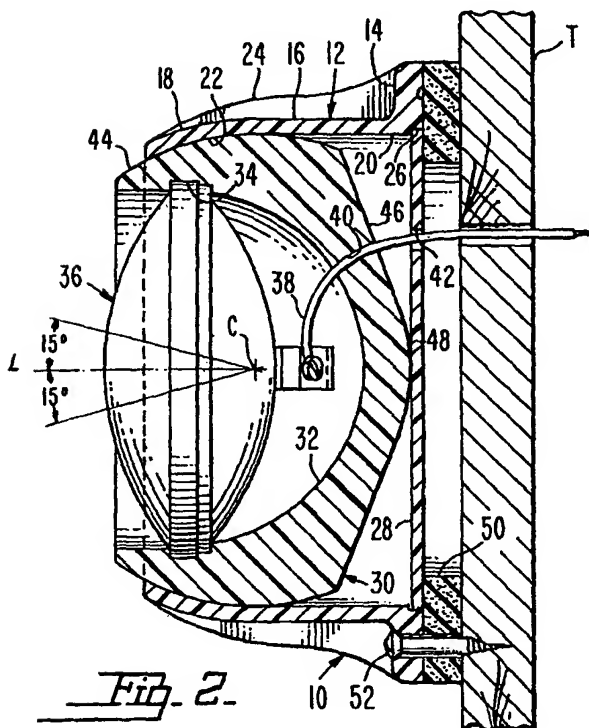


Fig. 2.

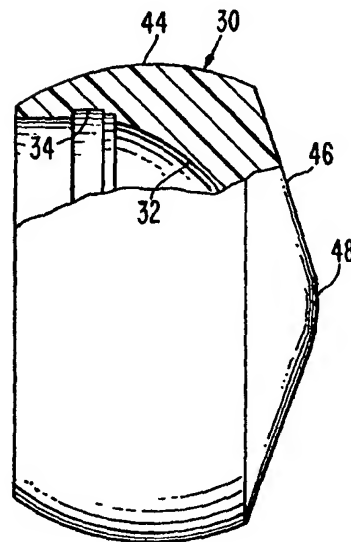


Fig. 4.

SPECIFICATION

Boat lights

5 This invention relates to boat lights for mounting on the hulls of boats such as cabin cruisers and similar water craft.

It is known to provide lamp units which may be so mounted upon the hulls of small vessels as to permit 10 adjustment for the purpose of directing their beams along selected paths. Some of the prior art devices have been of the recessed type, but these are not suitable for use at some locations. Recessing the unit in the transom, for example, may cause the unit to 15 project into the cockpit or other open space intended to remain fully accessible to the passengers or crew. The prior art further fails to show a highly simplified yet rugged boat light, especially adapted to be transom-mounted, in which any of various 20 universal adjustments can be made relative to the mounting, to compensate for the inclination of the transom and assure the projection of the light beams along horizontal paths or, for that matter, paths that depart from the horizontal to an extent preferred by 25 the particular boat owner.

According to the present invention there is provided a boat light comprising:

- a) a housing including a skirt having a curved inner surface;
- 30 b) a shield closing the housing at one end;
- c) a lamp unit holder in the other end of the housing, said holder having an outer surface curved correspondingly to and movably contacting the inner surface of the housing, whereby said holder 35 may be adjusted to selected angular positions relative to the housing;
- d) a lamp unit carried by the holder; and
- e) means for affixing the housing to the hull of a boat.

40 In its preferred form to be described the invention provides a boat light which is especially well adapted for surface mounting on a transom (though it may under some circumstances be utilised in a mounting of the recessed type), and which comprises a generally cylindrical housing, having an inner 45 end adapted to be closed by a protective shield. The housing is adapted to be secured to the transom of the boat hull.

Within the outer end of the housing, there is 50 mounted a lamp unit holder, of the so-called "eyeball" type, having a spherically curved outer surface complementing a correspondingly curved inner surface formed in the outer end portion of the housing. A lamp unit is releasably gripped within the 55 holder to facilitate ready interchange of said units, which are per se conventional. The holder, at its inner end, has a shallowly conical end wall, the apex of which is rounded off. The rounded area of the end wall of the holder is spherically curved. When the 60 screws are tightened to mount the device upon the transom, the shield bears against the curved area of the holder end wall and compressibly deforms the material of the holder. This flattens the engaged area of the holder into tight frictional contact with the 65 surface of the shield. In this way, the selected

universal adjustment of the holder is retained.

The present invention will be further understood from the following detailed description of a preferred embodiment thereof which is made, by way of 70 example, with reference to the accompanying drawings, in which:-

Figure 1 is a front elevational view of a boat light according to the present invention, a transom on which the light is mounted being shown fragmentarily; 75

Figure 2 is a sectional view through the boat light, substantially on line 2-2 of *Figure 1*;

Figure 3 is a sectional view through the boat light on the same cutting plane as *Figure 2*, with the 80 holder being left in side elevation and tiltably adjusted for projection of its beam along a horizontal path despite mounting thereof on an inclined transom; and

Figure 4 is a view, partly in side elevation and 85 partly in section, of the lamp unit holder per se.

Referring to the drawing in detail, the reference character T designates a transom of a cabin cruiser, speedboat, or similar water craft. This, according to the design of the particular craft, may be substantially 90 vertically disposed as in *Figure 2* or alternatively, may be inclined in one or the other direction from the vertical. The boat light comprising the present invention has been generally designated 10. It includes a housing generally designated 12, preferably formed of a moulded plastic material. A suitable material, for example, is "Rovel 701", a product of UniRoyal Corporation.

The housing is of a rigid material, and in the preferred embodiment includes a generally flat, 100 annular base 14. Moulded integrally with and projecting outwardly from base 14 is a cylindrical skirt 16 having a tapered outer end portion 18 merging into an inner end portion 20 that is of a constant diameter both internally and externally thereof. The 105 inner surface of end portion 18 is spherically curved as at 22, about a centre C located well forwardly of the inner end of the housing.

Strengthening the housing is an annular series of uniformly, angularly spaced, radial ribs or gussets 24 110 moulded integrally with the skirt 16 and base 14.

In the inner end of the housing (see *Figure 2*), there is formed a shallow, continuous recess 26 adapted to receive a flat, circular retaining plate or shield 28. Shield 28 in a preferred embodiment is of a flame, 115 arc, and ozone resistant polyester material, and when seated in the recess 26, closes the inner end of the housing 12, in a position in which it bears against the inner end wall of a lamp unit holder generally designated 30.

120 Holder 30 is of the so-called "eyeball" type, having a forwardly opening, approximately hemispherical recess 32 in the wall of which is formed a stepped mounting groove 34 for a sealed beam lamp unit generally designated 36.

125 Lamp unit 36 is conventional per se, and includes a cord 38, extendable through an opening 40 formed in the inner end wall of the holder 30. Cord 38 also extends through an opening 42 formed in the shield 28, and through a suitable opening formed in the 130 transom, for connection of the lamp unit to a source

of electrical power, not shown.

The outer surface 44 of the holder 30 is spherically curved correspondingly to the curvature of the inner surface 22 of housing 16. Surfaces 22, 44 are curved about the common centre C, thus to permit universal angular adjustment of the holder within the housing. Preferably, said adjustments are limited to approximately 20° in any direction from a centre line CL on which centre C falls, and which intersects the plane of shield 28 at the centre of the shield, perpendicular to the shield plane.

The holder is formed of a silicone material, preferably of approximately 50 durometer, so as to permit the holder to be compressibly deformed, or otherwise flexed to an extent necessary to permit the lamp unit 36 to be snapped into the stepped groove 34. This causes the lamp unit to be effectively gripped within and by the holder 30. When the lamp unit 36 burns out, it can be readily replaced by detaching the boat light from the transom, to facilitate removal of the shield 28 and withdraw all of the holder 30 through the now open inner end of the housing 12. In these circumstances, a burned-out lamp unit can be effectively and readily removed from the holder 30 by the user flexing the holder material out of engagement with the lamp unit, after which a new lamp unit can be snapped into the stepped groove 34.

The formation of the holder 30 from a deformable material has another important purpose. As shown, the holder includes an inner end wall 46 which exteriorly is shallowly conical in the preferred, illustrated embodiment. The centre area or apex portion 48 of the end wall is rounded off, being spherically curved about the centre C. When the device is fully assembled, as in Figures 2 and 3, and mounted upon the transom, the rounded centre area 48 is flattened by the shield 28, being thus brought into tight frictional contact therewith. This preserves any angular adjustment of the holder that has been selected by the user.

Completing the assembly is an annular gasket 50 formed of a foam rubber material, having openings registering with uniformly, angularly spaced openings of base 14 to receive mounting screws 52 extendable into the transom T.

In use, and assuming that the transom is substantially vertical and that it is desired that the lamp unit 36 project its beam rearwardly from the stern of the vessel in an approximately horizontal path paralleling the water surface, one first adjusts the holder 30 within the housing 12 to a selected position relative to the housing 12. These adjustments are universal, so that the beam can be projected not only upwardly or downwardly, but also to port or starboard, as desired. In Figure 2, a centred position of the holder 30 has been selected.

With the holder 30 so adjusted, and with the shield and gasket assembled closely with the housing 12, screws 52 are threaded into the transom. When the screws are tightened, they compress the gasket 50, and force the shield 28 against the inner end of the holder 30. In particular, the shield 28 contacts the spherically rounded centre area 48 of the inner end wall 46 of the holder 30. It may be noted at this point

that the radius about which the centre area 48 is spherically curved is slightly greater than the linear distance measured between the centre C and the plane of the inner surface of the shield 28, measured along the line CL. As a result, the shield 28 is caused to press tightly against the surface 48, compressibly deforming the same to a flattened condition illustrated in Figures 2 and 3. This binds the holder frictionally against the inner surface of the shield, to preserve the adjustment selected for the holder 30.

In Figure 3 there is shown an arrangement for use when the transom T is inclined substantially to the vertical in a direction reached by a rotation of the transom T in a clockwise direction from the position illustrated in Figure 3. Assuming that it is desired again to project the beam of the lamp unit horizontally rearwardly from the vessel's stern, the holder is adjusted to so dispose the lamp unit. Then, once again the screws 52 are turned home to tighten the entire assembly and thereby bind the shield frictionally against the now flattened surface 48.

Normally, when an adjustment is made, it is left undisturbed indefinitely, for example, until the lamp unit burns out and needs replacement.

CLAIMS

1. A boat light comprising:
 - a) a housing including a skirt having a curved inner surface;
 - b) a shield closing the housing at one end;
 - c) a lamp unit holder in the other end of the housing, said holder having an outer surface curved correspondingly to and movably contacting the inner surface of the housing, whereby said holder may be adjusted to selected angular positions relative to the housing;
 - d) a lamp unit carried by the holder; and
 - e) means for affixing the housing to the hull of a boat.
2. A boat light according to Claim 1 wherein the shield engages the holder against movement from each position to which the holder is adjusted.
3. A boat light according to Claim 2 wherein the holder is formed, at least in the area in which it is engaged by the shield, of a material adapted to be compressibly deformed into a tight frictional contact with the shield.
4. A boat light according to Claim 3 wherein said surfaces of the housing and holder are spherically curved for universal adjustment of the holder within the housing.
5. A boat light according to Claim 4 wherein said surfaces of the housing and holder are curved about a common centre.
6. A boat light according to Claim 5 wherein said common centre is located forwardly of the shield.
7. A boat light according to Claim 6 wherein the shield is flat and the common centre falls on a line perpendicular to the plane in which the shield lies.
8. A boat light according to Claim 7 wherein the housing and shield are circular and the said line passes through the centre of the shield.
9. A boat light according to Claim 8 wherein the area of the holder engaged by the shield is curved, in

the uncompressed condition of said area, about the same centre as said spherically curved surfaces of the holder and housing.

10. A boat light according to Claim 9 wherein the centre about which said area of the holder is curved is spaced away from the shield a distance less than the radius of the curvature of said area whereby to compressibly deform said area to a flattened condition at the location at which it is engaged by the shield.

11. A boat light according to Claim 10 wherein said means for affixing the housing to a boat hull is adapted to be loosened to relieve the engagement between the holder and shield sufficiently to permit said adjustment of the holder, said means when tightened being adapted to draw the holder, shield and housing together to bind the holder frictionally against the shield and thereby retain the holder in a selected position of adjustment.

12. A boat light which is especially adapted for mounting on the transom of a boat and which comprises an assembly constructed and arranged substantially as herein particularly described with reference to the accompanying drawings.